

IN THE CLAIMS:

1. (currently amended) A web-enabled automation control module (ACM) comprising:

an ACM central processing unit (CPU);

an ACM CPU system memory electrically connected to said ACM CPU; and

a web and file transfer system directly electrically connected, without using a backplane, to said ACM CPU, said web and file transfer system embedded within said ACM, said web and file transfer system comprising a web server, a file transfer server, and a database, said web and file transfer system configured to:

receive from a network a plurality of user-defined web page files, at least one of the plurality of user-defined web page files comprising at least one ACM tag function that facilitates an exchange of ACM data between said web server and said ACM CPU system memory;

store the plurality of user-defined web page files in said database;

receive, from the network, a hypertext transfer protocol (HTTP) request to send a first user-defined web page file of the plurality of user-defined web page files to the network;

process the HTTP request;

access the first user-defined web page file referenced in the HTTP request;

parse the first user-defined web page file for the at least one ACM tag function;
[[and]]

execute the at least one ACM tag function using form data from the HTTP request to transmit ACM data to said ACM CPU to control operation of said ACM;

enable a user to configure at least one web and file transfer connection of a plurality of web and file transfer connections; and

disable the plurality of web and file transfer connections when the user does not configure the at least one web and file transfer connection;

wherein said ACM is one of a programmable logic controller (PLC), a computer numeric control (CNC), and a motion control product.

2. (previously presented) An ACM in accordance with Claim 1 wherein said web server is electrically connected to said ACM CPU and the network, said web server configured to receive the HTTP request from the network and to process the HTTP request from the network.

3. (canceled)

4. (previously presented) An ACM in accordance with Claim 2 wherein said web server is configured to respond to the HTTP request from the network by one of transmitting the first web page file to the network or transferring ACM data to the ACM CPU using form data from the HTTP request.

5. (previously presented) An ACM in accordance with Claim 1 wherein said database is electrically connected to said web server, and said web server is configured to read the first user-defined web page file from said database.

6. (previously presented) An ACM in accordance with Claim 1 wherein said web server is configured to receive ACM data from said ACM CPU.

7. (previously presented) An ACM in accordance with Claim 1 wherein said web server is configured to transfer ACM data to said ACM CPU.

8. (previously presented) An ACM in accordance with Claim 6 wherein said web server is configured to receive ACM data from said ACM CPU and embed the received ACM

data within the first user-defined web page file based on function tags embedded within the first user-defined web page file.

9. (previously presented) An ACM in accordance with Claim 1 wherein said web server is configured to send the first user-defined web page file through the network using HTTP.

10. (previously presented) An ACM in accordance with Claim 1 wherein said web and file transfer system further comprises a network interface configured for connection to the network.

11. (canceled)

12. (previously presented) An ACM in accordance with Claim 1 wherein said ACM comprises a backplane interface electrically connected to said ACM and a backplane electrically connected to said backplane interface, said ACM backplane configured for connection with at least one of an input/output (I/O) module and an input module.

13. (currently amended) An automation control module (ACM) system comprising:

a network;

a web-enabled computer electrically connected to said network; and

an ACM electrically connected to said web-enabled computer via said network, wherein said ACM is at least one of a programmable logic controller (PLC), a computer numeric control (CNC), and a motion control product, said ACM comprising an ACM central processing unit (CPU) directly electrically connected to a web and file transfer subsystem without using a backplane, said ACM CPU and said web and file transfer subsystem embedded within said ACM, said web and file transfer subsystem comprising a web server, a file transfer server, and a database, said web and file transfer subsystem configured to:

receive from said web-enabled computer, via said network, a plurality of user-defined web page files, at least one of said plurality of user-defined web page files

comprising at least one ACM tag function that facilitates an exchange of ACM data between said web and file transfer subsystem and said ACM CPU;

store the plurality of user-defined web page files in said database;

receive from said web-enabled computer, via said network, a hypertext transfer protocol (HTTP) request to send a first user-defined web page file of the plurality of user-defined web page files to said web-enabled computer;

process the HTTP request;

access the first user-defined web page file referenced in the HTTP request;

parse the first user-defined web page file for the at least one ACM tag function; [[and]]

execute the at least one ACM tag function using form data from the HTTP request to transmit ACM data to said ACM CPU to control operation of said ACM;

enable said user to configure at least one web and file transfer TCP connection of a plurality of web and file transfer TCP connections using said computer; and

disable said plurality of web and file transfer TCP connections when none of said plurality of web and file transfer TCP connections are configured.

14. (previously presented) An ACM system in accordance with Claim 13 wherein said database is electrically connected to said network and said file transfer server.

15. (previously presented) An ACM system in accordance with Claim 14 wherein said file transfer server is configured to read and write to the plurality of user-defined web page files stored in said database.

16. (previously presented) An ACM system in accordance with Claim 13 wherein said file transfer server configured to transfer the plurality of user-defined web-page files though said network to said computer.

17. (previously presented) An ACM system in accordance with Claim 13 wherein said file transfer server configured to allow a user to at least one of create the user-defined web page files and modify the user-defined web page files.

18. (previously presented) An ACM system in accordance with Claim 13 wherein at least one of the plurality of user-defined web page files comprises at least one of hypertext markup language (HTML), Javascript, and references to other files.

19. (original) An ACM system in accordance with Claim 18 wherein said references to other files comprise at least one of at least one image file and at least one Applet.

20. (previously presented) An ACM system in accordance with Claim 13 wherein at least one of the plurality of user-defined web page files comprises at least one ACM tag function.

21. (previously presented) An ACM system in accordance with Claim 13 wherein said file transfer server is a file transfer protocol server.

22. (previously presented) An ACM system in accordance with Claim 13 wherein said web and file transfer subsystem further comprises a network interface electrically connected to said file transfer server and said network.

23. (canceled)

24. (previously presented) An ACM system in accordance with Claim 13 configured to display at least one of the plurality of user-defined web page files on said computer.

25. (original) An ACM system in accordance with Claim 13 wherein a user is required to enter a valid user name and user password to access said ACM system.

26. (canceled)

27. (canceled)

28. (currently amended) A method for management and control of an automation control module (ACM) including an ACM central processing unit (CPU), wherein the ACM is one of a programmable logic controller (PLC), a computer numeric control (CNC), and a motion control product, said method comprising:

embedding a web and file transfer system within the ACM including electrically connecting the web and file transfer system directly to the ACM CPU without the use of a backplane, the web and file transfer system includes a web server, a file transfer server, and a database configured to store a user-defined web page file;

electrically connecting the web and file transfer system to a network;

processing a hypertext transfer protocol (HTTP) request message from the network using the web and file transfer system, the HTTP request message comprising a request to send the user-defined web page file to the network; [[and]]

using form data from the HTTP request message to transfer ACM data to the ACM CPU to control operation of the ACM;

enabling a user to configure at least one web and file transfer connection of a plurality of web and file transfer connections; and

disabling the plurality of web and file transfer connections when the user does not configure the at least one web and file transfer connection.

29. (previously presented) A method in accordance with Claim 28 wherein the web server is electronically connected to the ACM CPU and the network, processing the HTTP request message from the network using the web and file transfer system comprises processing the HTTP request message from the network using the web server.

30. (previously presented) A method in accordance with Claim 29 wherein processing the HTTP request message from the network using the web server comprises:

receiving the HTTP request message from the network using the web server; and

responding to the HTTP request message using the web server.

31. (previously presented) A method in accordance with Claim 29 wherein the database is electrically connected to the web server, processing the HTTP request message from the network using the web server comprises:

receiving the HTTP request message from the network;

reading the user-defined web page file from the database, the user-defined web page file referenced in the HTTP request message;

requesting the ACM data from the ACM CPU via function tags embedded within the user-defined web page file;

receiving the ACM data from the ACM CPU;

embedding the ACM data within the user-defined web page file; and

sending the user-defined web page file through the network.

32. (previously presented) A method in accordance with Claim 29 wherein processing the HTTP request message from the network using the web server comprises transferring ACM data to the ACM CPU using the web server as directed by function tags embedded within the user-defined web page file and by form data contained in the HTTP request message.

33. (previously presented) A method in accordance with Claim 28 wherein the file transfer server is electrically connected to the database and the network, said method further comprising:

storing the user-defined web page file in the database;

reading the user-defined web page file using the file transfer server and the network;
and

writing to the user-defined web page file using the file transfer server and the network.

34. (original) A method in accordance with Claim 31 wherein the database includes at least one user name and at least one user password, the network includes at least one computer electrically connected to the network, said method further comprising requiring a user input a valid user name and valid user password into the computer to access the web and file transfer system.

35. (canceled)

36. (currently amended) A method for management and control of an automation control module (ACM) using an ACM system, the ACM system including a network, a web-enabled computer electrically connected to the network, and the ACM electrically connected to the web-enabled computer via the network, the ACM comprising an ACM central processing unit (CPU), wherein the ACM is one of a programmable logic controller (PLC), a computer numeric control (CNC), and a motion control product, said method comprising:

embedding a web and file transfer subsystem within the ACM including directly electrically connecting the web and file transfer subsystem to the ACM CPU without the use of a backplane, the web and file transfer subsystem includes a web server, a file transfer server, and a database;

storing at least one user-defined web page file in the database, the at least one user-defined web page file comprising at least one ACM tag function that facilitates an exchange of ACM data between the web and file transfer subsystem and the ACM CPU;

processing a hypertext transfer protocol (HTTP) request from the network; [[and]]

executing the at least one ACM tag function using form data from the HTTP request to transfer ACM data to the ACM CPU to control operation of the ACM;

enabling a user to configure at least one web and file transfer connection of a plurality of web and file transfer connections; and

disabling the plurality of web and file transfer connections when the user does not configure the at least one web and file transfer connection.

37. (canceled)

38. (previously presented) A method in accordance with Claim 36 further comprising:

reading the at least one user-defined web page file stored in the database using the file transfer server; and

writing to the at least one user-defined web page file stored in the database using the file transfer server.

39. (previously presented) A method in accordance with Claim 38 wherein reading the at least one user-defined web page file stored in the database using the file transfer server further comprises:

transferring the at least one user-defined web page file to the computer; and

displaying the at least one user-defined web page file on the computer using the file transfer server.

40. (original) A method in accordance with Claim 38 wherein writing to the at least one user-defined web page file stored in the database using the file transfer server comprises allowing a user to modify the at least one user-defined web page file using the computer and the file transfer server.

41. (previously presented) A method in accordance with Claim 36 further comprising allowing a user to create a user-defined web page file using the computer and the file transfer server.

42. (previously presented) A method in accordance with Claim 36 wherein processing the HTTP request from the network comprises processing the HTTP request from the computer using the web server.

43. (previously presented) A method in accordance with Claim 36 wherein the database includes at least one user name and at least one user password, said method further comprising requiring a user input a valid user name and valid user password into the computer to access the web and file transfer subsystem.

44. (canceled)

45. (previously presented) An ACM in accordance with Claim 1 wherein said ACM is in operational control communication with a device.

46. (previously presented) An ACM in accordance with Claim 1, wherein said web server is configured to:

request ACM data from said ACM CPU based on parsing the web page file for tag functions and applying form data from the HTTP request;

receive ACM data from said ACM CPU;

embed the received ACM data within at least one web page file; and

send the at least one web page file to the network.